

Psychological Impact of Facial Trauma

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Abstract

Examination of the mental state of patients suffering from facial trauma is rarely ever recorded, let alone screening them for posttraumatic stress disorders (PTSDs) or generalized anxiety disorder. Providing early support to the patient in light of such psychological conditions can improve the overall quality of life. The aim of this study was to perform a literature review to assess the relation of mental state disorders to facial trauma in terms of their prevalence, assess screening methodology, and also to evaluate the prognosis of individuals subjected to psychological intervention/screening at an early stage of clinical examination. Research databases such as ScienceDirect, Google Scholar, PubMed, and Medline were searched using the keywords “psychological trauma,” “facial trauma,” and “PTSD.” Only meta-analyses, systematic reviews, and original research articles in the English language were included in the study. Correspondence to journal editors and clinician opinions were excluded from the study. Out of a total of 459 results, only 8 articles satisfied the inclusion criteria of the study. The literature review showed that patients suffering from orofacial trauma had significantly increased levels of mental state disorders such as PTSD and generalized anxiety disorder, more so in victims of assault. The results of this literature review clearly point toward an increased prevalence of mental state disorders in patients suffering from facial trauma, which warrants for early intervention in this regard to improve the quality of life of these patients.

Keywords

- facial trauma
- psychological trauma
- PTSD

Facial disfigurement, be it due to injury, congenital malformations, or as a result of a medical condition per se, invites a generally negative social response which leads to a further detrimental impact upon the psychological state of an individual. This is usually exhibited by withdrawing from social interactions.¹ It is generally believed that attractive individuals have higher self-esteem and greater academic as well as occupational satisfaction.²

Individuals with facial disfigurement tend to have altered body image and lower levels of self-esteem.³

What further compounds the problem is the fact that documentation of the psychological state of patients with acquired facial deformities is generally poor. This is quite

unfortunate, as the assessment of psychological sequelae can be performed using relatively simple measures such as a basic assessment at the initial stage of examination, and furthermore, this can be accomplished by nonmedical professionals as well.⁴

Several assessment tools are available to evaluate the psychological state of patients with acquired facial deformities, such as the Montgomery and Asberg depression rating scale (MADRS) which assesses the presence and subsequently the intensity of depression in an individual, the European quality of life—5 dimensions (EQ-5D) which is a quality-of-life index, the self-assessment test of thoughts in social interaction (SISST) which evaluates thoughts of an individual in social relationships, Hospital Anxiety and

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Depression Scale, and the Impact of Event Scale.⁴ ► **Table 1** shows the commonly used psychological assessment tools in patients with acquired facial trauma and their respective features.

Although it is a common assumption that acquired facial trauma would cause a deep psychological impact upon an individual, it is surprisingly very scarcely documented. Moreover, carrying out a psychological review of the traumatized is not a very common practice at centers dealing with facial trauma.

The purpose of this study was to conduct a literature review to bring to light the various psychological issues faced by patients of facial trauma, consolidate and present knowledge regarding the psychological impact of facial trauma, make clinicians aware of the psychological state of their patients, and promote empathy and sound clinical practice to improve the quality of life of such individuals along with emphasis on the psychological rehabilitation of such patients.

What follows is a discussion of psychological state in relation to acquired facial trauma under the specific heads of incidence, morbidity, and at-risk patients and finally, a proposed screening procedure to better help understand the psychological issues plaguing an individual suffering from acquired facial trauma and the institution of a possible management strategy as proposed by the author along with certain recommendations to adhere to when dealing with such a patient population.

Aim

The aim of this study was to perform a literature review to assess the relation of mental state disorders to facial trauma in terms of their prevalence as well as screening methodology and also to evaluate the prognosis of individuals subjected to psychological intervention/screening at an early stage of clinical examination.

Materials and Methods

The following research databases (along with their searched dates in brackets) were searched in the study: ScienceDirect (14.09.2016), Google Scholar (15.09.2016), PubMed (16.09.2016), and Medline (16.09.2016) using the keywords “psychological trauma,” “facial trauma,” and “PTSD.” The mentioned keywords were selected based on a pilot search conducted by the author, in which it was found that most numbers of results were obtained by using this set of keywords, as these were invariably mentioned in articles with other, often synonymous keywords such as “facial injury,” “psychological effects,” and “psychological sequelae.” A correlation was also noticed by the author in the mention of posttraumatic stress disorder (PTSD) in articles dealing with issues such as generalized anxiety disorder, posttraumatic depression, and posttraumatic body dysmorphia which led to the use of this particular keyword as it served the dual

Table 1 Psychological assessment tools

Assessment Tool	Features
Montgomery and Asberg depression rating scale (MADRS) ⁵	<ol style="list-style-type: none"> 1. Administered by third-party clinician. 2. Relies on objective assessment, hence, inadvisable to self administer. 3. Items include: Apparent sadness, reported sadness, inner tension, reduced sleep, reduced appetite, concentration difficulties, lassitude, inability to feel, pessimistic thoughts, suicidal thoughts 4. Scored from 0–6 based on how the patient has been feeling over the past 1 week.
European Quality of life 5 dimensions (EQ-5D) ⁶	<ol style="list-style-type: none"> 1. Cognitively undemanding 2. Can be used in postal surveys, interviews, in clinics. 3. To be completed by the respondents themselves 4. Instructions for responding are provided. 5. Items include mobility, self-care, usual activities, pain/discomfort, anxiety/depression. 6. Scored out of 5 possible responses based on how the respondent is feeling on that particular day.
Self assessment test of thoughts in social interaction/Social Interaction Self Assessment Test (SISST) ⁷	<ol style="list-style-type: none"> 1. Self report test 2. Total of 30 items with 15 positive and 15 negative statements 3. Answer scores range from 1–5 i.e., ‘hardly ever had the thought’ to ‘very often had the thought’.
Hospital anxiety and depression scale ⁸	<ol style="list-style-type: none"> 1. Self assessment scale 2. Total of 14 items scored from 0–3 3. Two subscales of Depression and Anxiety 4. 0–7: Normal, 8–10: Borderline abnormal, 11–21: Abnormal
Impact of event scale ⁹	<ol style="list-style-type: none"> 1. Set of 15 questions 2. Measures the distress associated with an event 3. Responses are- 0: Not at all, 1: Rarely, 3: Sometimes and 5: Often. 4. The sum gives the total stress score 5. 0–8: no meaningful impact, 9–25: impact event/patient may be affected, 26–43: powerful impact event/patient is certainly affected, 44–75: severe impact event/patient’s ability to function altered.

purpose of yielding results directly pertaining to PTSD and, at the same time, yielded results dealing with other (numerous) psychological effects following facial trauma.

Inclusion Criteria

Only meta-analyses, systematic reviews, and original research articles in the English language were included in the study.

Exclusion Criteria

Correspondence to journal editors and clinician opinions were excluded from the study.

The screening procedure for the results was as follows: the initial results of the search were collated and, from among these, only studies in English were retained. Next, only studies dealing with posttraumatic psychological effects were retained based on their titles. In the next step, from these studies, only meta-analyses, systematic reviews, and original research articles were looked for and retained. In the final step of the screening procedure, abstracts of all remaining studies were analyzed and only articles that dealt specifically with the psychological sequelae of facial trauma or those that aided in the assessment and explanation of the same were retained.

Results

A total of 361 results were excluded based on title and language; 67 records were excluded for being cited with more than one search term; and 17 records were excluded for not being meta-analyses, systematic reviews, or original research. For being correspondence/clinical opinion, three records were excluded based on study of abstracts.

Out of a total of 459 results, only 11 articles satisfied the inclusion criteria of the study. The literature review showed that patients suffering from orofacial trauma had significantly increased levels of mental state disorders such as PTSD and generalized anxiety disorder, more so in victims of assault (► **Table 2**).

Incidence

This section discusses the incidence of psychological problems among patients with acquired facial deformity.

Bisson et al in their study assessing 50 patients at 1 and 7 weeks of posttrauma, using the Hospital Anxiety and Depression Scale and the Impact of Event Scale, stated that individuals with acquired facial trauma had significant likelihood (27%) of progressing to develop PTSD by approximately 7 weeks after the trauma took place.⁴ In a study conducted by Balakrishnan et al, in a total of 115 facial and neck burn patients it was found that around 95% of the sample size had concerns regarding the future of their families as a result of their acquired disfigurement. A further 26% of the patients were of the belief that the existence of their disfigurement would culminate in the loss of their employment and livelihood. It was concluded that increased alcohol consumption, marital/relationship problems, and alteration in employment status existed in patients within 9 months of suffering partial thickness facial burns.¹⁰ Shepherd et al in their study confirmed the

development of psychological distress, depression, and anxiety in patients within 3 months of undergoing fracture of the mandible.

Hermes et al have also emphasized the presence of high levels of anxiety in patients undergoing oral and maxillofacial surgery procedures.¹¹

Morbidity of Psychological Conditions in Facial Trauma

To address the psychological impact of facial trauma, one must be aware of the kinds of psychological states which can be expected in patients with acquired trauma. An increased understanding of this would ensure an adequate screening procedure for the same along with an improvement of the overall quality of life of patients. The following section deals with recognizing morbidity of psychological problems associated with facial trauma.

At-Risk Individuals

Recognizing certain "at-risk" individuals would alert the clinician toward the need for a psychological evaluation of the patient.

These certain premorbid factors have been identified to tag patients as being "at risk" of developing a psychological problem post-facial trauma.

1. Premorbid psychiatric illness.⁴
2. Family support regarding traumatic event.²¹
3. Survivor guilt.²²
4. Litigation-related issues.²³
5. Etiology of trauma (industrial/accidental).²⁴
6. Socioeconomic status.²⁵
7. Other family members involved in the same traumatic event.¹⁶

Depression and Anxiety

Depression and anxiety assessed in patients of facial trauma may often be subthreshold and may not qualify as a psychiatric disorder per se. Medications that the patient may be taking along with sadness and grief over the event may be mistaken for depression. Hence, the absence of fulfillment of diagnostic criteria of psychological disorders creates diagnostic dilemmas which lead to improper management of such conditions. This in turn leads to poor treatment compliance and eventually unsatisfactory rehabilitation outcomes.^{12,13}

The patient is also worried by the length of the treatment and plagued by doubts regarding his recovery. This is compounded by the presence of depression and anxiety.

Frustration

Quite often, the recovery of patients of facial trauma is lengthy involving multiple surgeries encompassing a multidisciplinary rehabilitation process. This adds to the frustration of the patient.¹⁴

It has also been noted that recovery is impeded along with increased levels of stress in patients who have acquired injuries to key facial areas such as the eyes, ears, and dental injuries.¹⁵

Table 2 Studies assessed and their highlights pertaining to the psychological impact on facial trauma

Study	Highlight
Bisson et al ⁴	6. 27% of patients suffered from PTSD at the end of follow-up
	7. High scores on hospital anxiety and depression scale and impact of event scale
	8. Assault was the predominant etiology
	9. Highlights poor documentation of psychological aspects of facial trauma
	10. Even nonmedical professionals can conduct initial survey
Balakrishnan et al ¹⁰	4. 95% of traumatized patients feared for the futures of their families in light of their acquired disfigurement
	5. 26% of patients feared for loss of employment and livelihood
	6. Increased alcohol consumption, relationship problems, and altered employment scenarios occurred posttrauma
Hermes et al ¹¹	6. High scores on state trait anxiety inventory
	7. High levels of anxiety pertaining to oral and maxillofacial surgery procedures
	8. Females were more anxious
	9. Outpatients and those being treated under local anesthesia exhibited higher levels of anxiety
	10. In cases of recurrent treatment of the maxillofacial region, there is no alteration in anxiety with experience
Shepherd ¹²	Depression, anxiety, and distress developed in patients suffering from fractures of the mandible
Meningaud et al ¹³	4. Most patients seeking facial cosmetic surgery had demand regarding a specific physical attribute or feature
	5. Patients lacked self-confidence in social interactions and sought aesthetic facial surgery to remedy the same
	6. Aesthetic surgery must be conducted keeping in mind its consequences in their entirety
Vanswearingen ¹⁴	Recovery from facial trauma is lengthy and multidisciplinary which leads to an increase in the patient's frustration
Shaikh and Worall ¹⁵	Increased stress and hampered recovery in patients with injuries to key facial areas
Glynn et al ¹⁶	4. Predictors of PTSD established as mental/social service needs, lifetime use of social service, prior trauma, stress-inducing life event prior to trauma
	5. Patients disadvantaged socioeconomically exhibit poor psychological outcomes
	6. Surgical management of orofacial trauma in lower socioeconomic group patients must include management of psychological state and service requirements
Crowley ¹⁷	3. Females are more concerned about facial disfigurement
	4. Elderly females reported higher levels of posttraumatic pain
Thomas and Goldberg ¹⁸	Dysmorphophobic patients reported greater dissatisfaction with facial appearance, anxiety, and depression
Auerbach et al ¹⁹	4. Postsurgical patients exhibited greater levels of acute stress disorder
	5. Emotion-focused strategies for coping provided patients with greater satisfaction with facial appearance
	6. Patients who were severely injured seemed more controlling

Posttraumatic Stress Disorder

Facial trauma can occur quite often in association with industrial mishaps and other life-threatening conditions, predisposing such patients to the development of PTSD.

PTSD is characterized by avoidance of thoughts, emotions related to the traumatic event, reexperiencing the trauma, and autonomic nervous system hyperarousal.^{16,17}

As for depression and anxiety, patients may also experience subclinical forms of PTSD, that is, symptoms that do not fully satisfy the diagnostic criteria of PTSD.

It has also been noted that patients reporting PTSD symptoms post-facial trauma were more likely to also report increased stress and inadequate social support preinjury.¹⁸

Gender Predilection for Morbidity

Women, being found to be more concerned about facial appearance, have been found to have higher disfigurement concerns than men suffering from facial trauma. In addition, elderly female patients have also been documented to have

experienced greater amounts of posttraumatic pain when compared with their male counterparts.^{19,20}

It has been reported that the utilization of passive coping styles to manage deformity-related stress would result in a compromised quality of life.²⁶

Screening Procedure

In light of the earlier presented data, it would be prudent practice to employ a screening procedure to identify the presence of psychological disorders in patients with acquired facial trauma. This would help in alerting of threats to the quality of life of patients and would also ensure an effective management of the patient as a whole. A timely referral to mental health professionals can be arranged if the clinician feels that the patient may be suffering from or may be predisposed to the development of psychological disorders postinjury.

Certain factors can help aid in the identification of such disorders²⁷:

1. Anger.
2. Irritability.
3. Poor social and family support.
4. Long hospital stay.
5. Multiple surgeries.
6. Crying spells.
7. Depressed mood.
8. Loss of hope of recovery.
9. Poor financial support.
10. Loss of loved ones in traumatic event.
11. Loss of occupation.
12. Flashbacks.
13. Sleep disturbances.
14. Chronic pain.
15. Past history of psychiatric illness.
16. Preoccupation with facial appearance postrecovery.
17. History of familial psychiatric illness.

Author's Recommendations

What follows are certain recommendations from the author to help establish a basic management protocol for patients who might possibly be suffering from or may be prone to psychological disorders pertaining to acquired facial trauma.

Initial assessment of patients to screen for psychological problems must be conducted by utilizing a structured methodology such as that of psychological assessment tools. Quite a few of these tools are self-assessment and are not cognitively demanding which would provide the patient with ease of answering the items. Also, the initial psychological assessment can be conducted by nonmedical personnel as well.⁴

It must be recognized that quite a few of the traumatized patients are fearful for their families due to their acquired deformity, employment, and livelihood and it is imperative that such fears be allayed/redressed.¹⁰

Female patients have been identified as being more prone to anxiety related to oral and maxillofacial surgery procedures and the clinician must keep this in mind. Also, it has been found that procedures to be undertaken instigate higher levels of anxiety as compared with those under general anesthesia and

the patients must be counseled accordingly before being operated under local anesthesia or, if the medical fitness of the patient permits, be taken under general anesthesia. The clinician must also not expect the patient to feel less anxious simply because he/she has undergone a surgery in the maxillofacial region previously, as it has been found that there is no change in anxiety with recurrent treatment performed in this region.¹¹ Hence, the patient must be dealt with as undergoing a surgery for the first time in terms of counseling and empathy exhibited by the surgery team.

Patients with fractures of the mandible have been shown to undergo depression, increased levels of anxiety, and distress¹² and, hence, such patients must be screened and counseled appropriately.

Patients demanding aesthetic surgery must be treated as a whole and not as just a specific feature which requires correction, as most of these patients would have very specific demands regarding the correction of a particular physical feature. Surgery to improve aesthetics must be conducted keeping in mind its consequences in their entirety.¹³

Patients must be clearly explained the tentative duration of their recovery, as this would aid them in having realistic expectations and decrease their frustration in the long run because recovery from facial trauma is lengthy and multidisciplinary.⁹

It must be recognized that increased levels of stress and delayed recovery are prevalent in patients with injuries to the key areas of the face such as the eyes and ears.¹⁵

Stress-inducing life event before the occurrence of trauma and lifetime use of social services are predictors of PTSD. Socioeconomically disadvantaged individuals undergoing surgical management of orofacial trauma must undergo psychological assessment and management of psychological needs, as this group has been found to exhibit poor psychological outcomes.¹⁶

Elderly females tend to report higher levels of pain post-trauma and females, in general, are more concerned about facial disfigurement posttrauma.¹⁷

Patients with long-standing complaints about appearance and constant dissatisfaction with facial aesthetics must be screened for body dysmorphic disorder.¹⁸

Severely injured patients tend to be more controlling in their demands from treatment and during the recovery phase as well. Emotion-focused strategies for coping are more satisfactory for patients in terms of their facial appearance.¹⁹

After initial assessment of traumatized patients is done with, these patients must be explained clearly their present condition along with the proposed treatment plan. The family must also be involved in at this stage and realistic expectations from treatment must be cultivated.

The treatment plan must be explained explicitly and in its entirety with regard to postoperative disfigurement, pain, number of surgeries, time frame, and expected surgical morbidity such as pain, paresthesia, and swelling.

Apart from this, the treating surgeon must develop an empathetic attitude toward the patient and allot adequate time to patiently listen to the patient and his/her family's concerns and answer them in a reassuring manner but at the

same time remaining truthful about the recovery and morbidity expected.

In addition to these strategies, a psychiatric appointment can also be set up for the patient to allay any further concerns that he or she might have. Also, the dissemination of psychoeducational material addressing treatment outcomes and coping strategies may prove to be of benefit to the practice in general.

Conclusion

The results of this literature review clearly point toward an increased prevalence of mental state disorders in patients suffering from facial trauma. In addition, psychological assessment tools have been proved to be useful means in the screening of such patients and in recognizing underlying psychological issues. It is also quite evident that early psychological intervention affects the prognosis of patients in the long term.

Note

No ethical approval was sought as this article is a review. There is no conflict of interest or funding to declare.

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